

Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 4.

REMARKS

Claims 1 to 47 are pending.

Page 10 has been amended to correct an editorial error, wherein a digit of U.S. Pat. No. 5,185,299 (Wood et al.) (copy of the face of the patent enclosed) was inadvertently omitted.

Pages 13 and 15 have been amended to correct an editorial error. Support for this amendment can be found, for example in the specification on page 13, lines 13-24, page 15, lines 20-24, and in FIG. 4.

FIG. 4 has been corrected to replace one of the reference numbers "48" with 62. Support for this amendment can be found in the specification, for example, on page 13, lines 13-24 and page 15, lines 20-24.

Objections To The Disclosure

The disclosure is said to be objected to because of the following informalities:

On page 10, line 14, the patent number 5,185,29 (Wood et al). is missing a number.

Appropriate correction is said to be required.

Page 10 has been amended to correct this error.

On page 19, line 14, the blank space should be filled in with the appropriate US Serial No. Appropriate correction is said to be required.

The blank on page 19, line 14 was filled in in the Preliminary Amendment bearing a certificate of facsimile dated December 14, 2004 (copy enclosed).

Objections To The Drawing

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because it is said reference character “48” in Figure 4 has been used to designate both the tube furnace and what appears to be the stream of gas or liquid described on page 15, line 21 of the specification and designated as reference number 62. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are said to be required in reply to the Office action to avoid abandonment of the application. Further, it is said any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

FIG. 4 has been amended to correct the dual use of reference number 48. Further, page 15 (and page 13) has been amended to more clearly discuss reference number 62.

§103 Rejections

Claims 1-47 stand rejected under 35 USC § 103(a) as being unpatentable over US 6,344,270 (McCullough et al.).

The rejection of claims 1-47 under 35 USC §103(a) as being unpatentable over '270 (McCullough et al.) is unwarranted and should be withdrawn.

Applicants in independent claim 1, claim a metal-cladded metal matrix composite wire:

a metal matrix composite core having an exterior surface, the metal matrix composite core comprising:

at least one tow, wherein the tow comprises a plurality of continuous fibers that are oriented longitudinally with respect to each other, the fibers comprising at least one of ceramic or carbon;

a metal matrix, wherein each tow is positioned within the metal matrix; and

a metal cladding covering the exterior surface of the metal matrix composite core,

wherein the metal cladding has a melting point not greater than 1100°C, wherein the metal-cladded metal matrix composite wire, exhibits a roundness value of at least 0.95, a roundness uniformity value of not greater than 0.9%, and a diameter uniformity value of not greater than 0.2% over a length of least 100 meters.

Further, Applicants in independent claim 25, claim a metal-cladded metal matrix composite wire comprising:

an aluminum matrix composite wire having an exterior surface, the aluminum matrix composite wire comprising:

at least one tow, wherein the tow comprises a plurality of continuous fibers that are oriented longitudinally with respect to each other, the fibers comprising at least one of ceramic or carbon;

an aluminum matrix, wherein each tow is positioned within the aluminum matrix; and

a metal cladding covering the exterior surface of the aluminum matrix composite wire, wherein the metal cladding has a melting point not greater than 1100°C,

wherein the metal-cladded aluminum matrix composite wire, exhibits a roundness value of at least 0.98, a roundness uniformity value of not greater than 0.5%, and a diameter uniformity value of not greater than 0.2% over a length of at least 100 meters.

In the Office Action, '270 (McCullough) is said to teach a composite wire or cable that includes fiber reinforced metal matrix composites comprising a core containing at least one tow comprising a plurality of substantially continuous, longitudinally positioned reinforcing fibers of ceramic or carbon which is encapsulated within a metal matrix (col. 3, l. 31-45). Further '270 (McCullough et al.) teaches that the wire or cable may have a metal cladding covering the metal matrix composite core (col. 9, l. 21-65 and Figures 4-5).

'270 (McCullough et al.) is also said to teach that the wire or cable has a roundness value of at least 0.95, a roundness uniformity value of not greater than 1.5%, and a diameter uniformity value of not greater than 0.5% over a length of at least 100 meters (col. 1, l. 57-col. 2, l. 6). '270 (McCullough et al.) is said to exemplify embodiments wherein the roundness uniformity value is as low 0.94% and the diameter uniformity value of 0.21% (Table 1, runs 12 and 6 respectively).

It is said that although the prior art does not exemplify embodiments having the claimed properties, it teaches that the claimed properties as being maximum or minimum values with no upper or lower limit boundaries being specified. As such, it is alleged it would have been obvious to one of ordinary skill in the art to have formed the metal-clad metal matrix composite wire having a roundness uniformity value lower than the 0.5% including having values within the ranges claimed by Applicant. Furthermore, '270 (McCullough et al.) is said to exemplify embodiments having values that are so close that prima facie one skilled in the art would have expected them to have the same properties.

Regarding claim 25, the Office Action says '270 (McCullough et al.) teach what is set forth above but does not exemplify an embodiment wherein the roundness value is at least 0.98. It is said however, as was set forth above, that since '270 (McCullough et al.) only teaches the minimum value for the roundness value of being at least 0.95, higher values including that claimed by Applicant would have been obvious.

Column 9, lines 21-65 (and Figures 4-5) of '270 (McCullough et al.) discuss, in part, a plurality (19 as shown) metal matrix composite wires stranded together and having a

“maintaining means” (e.g., tape overwrap) over the strand. Notwithstanding the reference in the in the Office Action to col. 9, l. 21-65 and Figures 4-5 of ‘270 (McCullough et al.), it is unclear where ‘270 (McCullough et al.) clearly teaches or suggests cladding a metal matrix composite wire, or that it would even be desirable to have a cladded metal matrix composite wire. Moreover, it is unclear, where ‘270 (McCullough et al.) clearly teaches or suggests having the “maintaining means” over a wire such that the resulting material would have the uniformity and roundness values required by Applicants’ claims, or that such a construction is even desirable. Hence, it is submitted the Office Action fails to make a prima facie case of obviousness.

Claims 2-24 depend directly or indirectly from claim 1. Claim 1 is patentable, for example, for at least the reasons given above. Therefore, claims 2-24 should also be patentable.

Claims 26-47 depend directly or indirectly from claim 25. Claim 25 is patentable, for example, for at least the reasons given above. Therefore, claims 26-47 should also be patentable.

In summary, the rejection of claims 1-47 under 35 USC §103(a) as being unpatentable over ‘270 (McCullough et al.) should be withdrawn.

In view of the above, it is submitted that the application, as amended, is in condition for allowance. Reconsideration of the application is requested.

Allowance of claims 1-47 at an early date is solicited.

Respectfully submitted,

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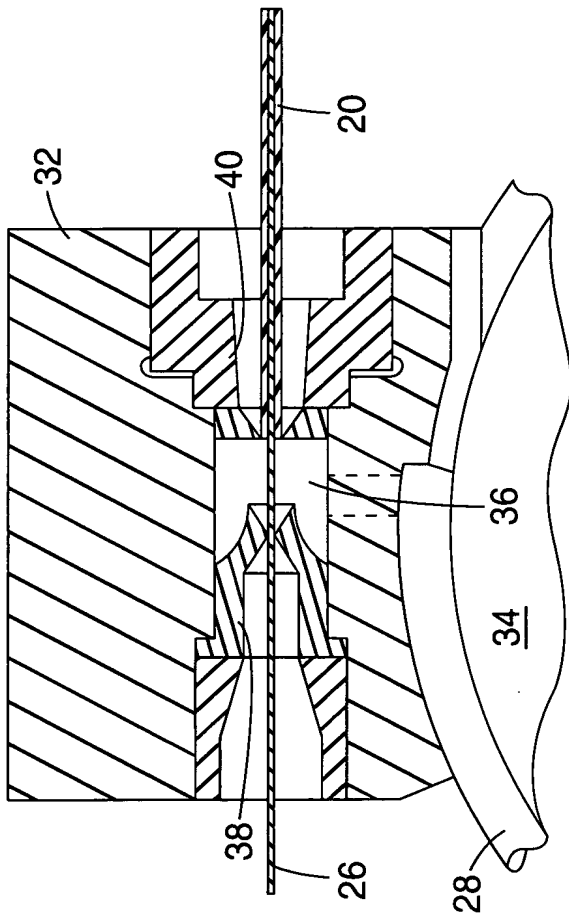


Fig. 3

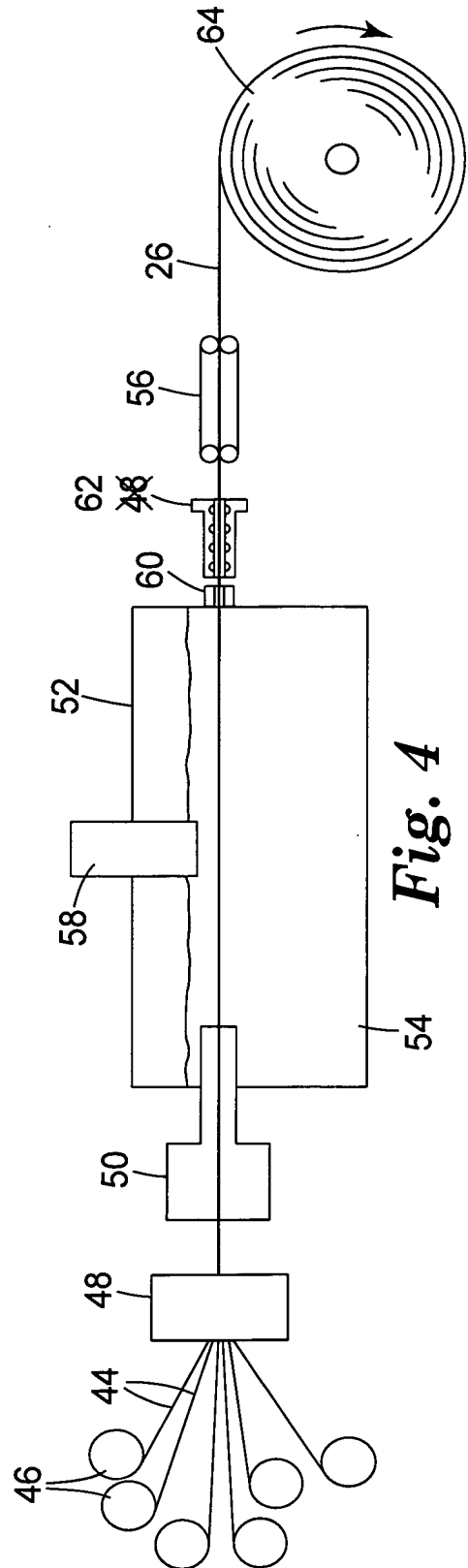


Fig. 4